

SUPPORT FOR THE AMENDMENTS

Newly-added Claims 17-25 are supported by the specification and the original claims. Accordingly, no new matter is believed to have been added to the present application by the amendments submitted above.

REMARKS

Claims 17-25 are pending. Favorable reconsideration is respectfully requested.

The present invention relates to a process for producing a purified resist polymer solution, comprising:

(1) dissolving a solid product comprising a resist polymer comprising a repeating unit decomposable by, and becoming alkali-soluble by, the action of an acid and a polar group-containing repeating unit, in a solvent (b) comprising one or more solvents selected from the group consisting of acetone, methyl ethyl ketone, tetrahydrofuran, ethylene glycol dimethyl ether, and ethyl acetate, and

(2) evaporating from the solution obtained in (1) the solvent (b) while adding, under reduced pressure with the temperature being controlled at 70°C or less, a solvent (a) comprising one or more solvents selected from the group consisting of propylene glycol monomethyl ether acetate, ethyl lactate, cyclohexanone, methyl amyl ketone, diethylene glycol dimethyl ether, diethylene glycol monoethyl ether, and γ -butyrolactone,

where the boiling point of solvent (b) is not higher than the boiling point of solvent (a) at atmospheric pressure, and

where the amount of impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvent (a) is 1 mass% or less of the resist polymer in the purified resist polymer solution.

See Claim 17.

The present invention is based on the discovery that the use of a specified solvent (b) and a specified solvent (a) can reduced the amount of impurities in a resist polymer solution. See the specification at page 15..

The rejections of the claims under 35 U.S.C. §103(a) over Sounik et al. in view of Sehm and further in view of Zampini et al., and further in view of Breyta et al., are respectfully traversed. The cited references fail to suggest the claimed process.

Sounik et al. describe a liquid phase process for preparing polymers. See the Abstract. The process involves a “Solvent Swap,” involving a “carboxylic alcohol solvent” and a second solvent which is immiscible with the alcohol solvent. See page 2, column 1, bottom and page 6. However, Sounik et al. fail to disclose a process involving the combination of solvent (b) in (1) and solvent (a) in (2), as set forth in Claim 17.

Sehm describes a solvent exchange process for carbonyl containing polymer slurries. See the Abstract. Sehm fails to disclose a process involving the combination of solvent (b) in (1) and solvent (a) in (2), as set forth in Claim 17.

Zampini et al. disclose a phenolic resin purification process. See the Abstract. Zampini et al. fail to disclose a process involving the combination of solvent (b) in (1) and solvent (a) in (2), as set forth in Claim 17.

Breyta et al. disclose a process for imaging of photoresist. See the Abstract. The reference fails to disclose a process involving the combination of solvent (b) in (1) and solvent (a) in (2), as set forth in Claim 17.

None of the references disclose the specific combination of solvents set forth in Claim 17. Moreover, the references taken in combination fail to suggest such a feature in a process for producing a purified resist polymer solution, certainly one in which the amount of impurities is 1 mass% as specified in Claim 17.

In view of the foregoing, the claimed process is not suggested by the combination of references set forth in the Office Action. Accordingly, the subject matter of the pending claims is not obvious over those references. Withdraw of these grounds of rejection is respectfully requested.

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Reply to Office Action of April 24, 2009

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

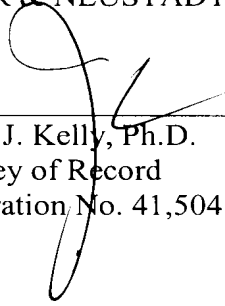
Respectfully submitted,

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